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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/904,511	07/16/2001	Keitaro Aoshima	003510-103	2268

7590 10/14/2003

Platon N. Mandros
BURNS, DOANE, SWECKER & MATHIS, L.L.P.
P.O. Box 1404
Alexandria, VA 22313-1404

EXAMINER	
WALKE, AMANDA C	
ART UNIT	**PAPER NUMBER**
1752	

DATE MAILED: 10/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/904,511	AOSHIMA, KEITARO	
	Examin r	Art Unit	
	Amanda C Walke	1752	

-- The MAILING DATE of this communication appears on the c ver sheet with the c rrespondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 July 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16,19 and 20* is/are rejected.

7)☒ Claim(s) *17 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al (5,773,194) in view of Sheriff et al (6,117,610).

****NOTE: The present claims 1-8 are drawn towards a negative planographic printing plate. However, it is clear from the description of the recording layer in the specification and in the claims that the claims are specifically drawn to a non-imaged composition coated onto a substrate (i.e. plate precursor). This was how the claims were interpreted during the examination.

Additionally, with respect to the present claims 9-16, the claims are drawn to a method of forming a printing plate comprising exposing a material wherein the solubility of the layer in the exposed portions is decreased with respect to an alkali developer and then is developed employing "*a* developer". From reading the specification (especially page 53, paragraph 3), it is clear that the invention is limited to the layer being developed with an alkali developer only, therefore the developer employed in the developing step is an alkali developer. This was how the claim was interpreted during the examination.

Lastly, with respect to the optical density limitation, after reading the specification (specifically pages 8 and 13), it is clear that the present invention is limited to the optical density

being the optical density of the non-imaged layer coated on the substrate, thus this was how the claims were interpreted during the examination.

Hattori et al disclose a light-sensitive composition for a presensitized lithographic printing plate, the composition comprising a monomer containing at least one polymerizable double bond, a photopolymerization initiator, and a binder polymer. The polymers described by the reference suitable for use as the monomer containing at least one polymerizable double bond are similar to those described by the present specification as suitable for use as the polymerizable compound (column 9, line 31 to column 11, line 10). The photopolymerization initiators are preferably onium salts, including sulfonium salts (column 11, lines 12-39 and column 12, line 9 – column 14, line 40). The composition may also comprise a polymeric binder in combination with the other additives. The light sensitive composition may contain a dye such as dyes or sensitizers that absorb near-IR light. Suitable dyes include cyanine derivatives, pyrilium derivatives, and squarium derivatives although other known compounds may be employed as well (column 18, lines 7-44). The composition is a negative working one meaning that upon exposure, the portion of the composition that is exposed by the light/heat source undergoes polymerization and is hardened and are insoluble in alkali developer (column 21, lines 22-31 and column 27, lines 57-64).

With respect to the present claim limitations with respect to the film hardness, firstly, the present claims 1 and 9 require that the of the upper portion of the recording layer after the reduction in solubility in an alkali developer (after exposure) is higher than the average hardness of the layer, although not specifically discussed by the reference, it is the position of the examiner that when exposed, the upper portion of the layer would inherently have a higher film

hardness than the average because the upper portion receives a higher exposure to the light/heat than a portion farther away from the light/heat source (i.e. the "bottom" of the layer that is closer to the substrate), and thus there would be a higher degree of polymerization in that region which would make the film hardness higher there.

With respect to the limitations of the present claims 6 and 14, again although not specifically discussed by the reference, the reference employs the same types of polymerizable monomers, binder resins, infrared absorbers, and photopolymerization initiators, and is prepared by a similar method, thus it is the position of the examiner that when made, the imaged plate of the reference would have a film hardness falling within the presently claimed range absence evidence to the contrary.

Although the reference discloses that infrared absorbing compounds may be employed, there is no teaching of a suitable amount.

Sheriff et al disclose an infrared sensitive imaging composition similar to that of the primary reference, and discloses that the suitable infrared absorbers include well known compounds such as carbon black, cyanine dyes, squrilium dyes, and thiopyrilium dyes (column 6, lines 1-17). The reference teaches that the compounds should be present in the dried coated imaging layer an amount which gives the material an optical density of at least 0.05 to about 2.0, preferably about 0.5 to 2.0, thus teaching that this is a conventionally preferred optical density target when adding such infrared absorbers (column 7, lines 50-57). This taught range encompasses and obviates the ranges presently claimed. Additionally, the reference teaches that conventional (IR) laser exposure is conducted at an energy of between 10-1000 $mW/\mu m^2$, which appears to include the presently claimed 80 mJ/cm^2.

Therefore, given the teachings of the references, it would have been obvious to one of ordinary skill in the art to prepare the printing plate of Hattori et al choosing to add the infrared absorbers in the amount taught to be known and preferred in the art to achieve the preferred optical density target known in the art, with reasonable expectation of achieving a plate having excellent printing durability and sensitivity.

Additionally, given the teachings of Sheriff et al that conventional (IR) laser exposures are conducted at an energy between 10-1000 $mW/\mu m^2$ (which appears to include the presently claimed 80 mJ/cm^2), it would have been obvious to one of ordinary skill in the art to prepare the printing plate of Hattori et al choosing to expose the infrared sensitive material at the energy taught to be conventional by Sheriff et al with reasonable expectation of achieving a plate having excellent printing durability and sensitivity.

With respect to the limitations of the present claims 2 and 10, which require that the infrared absorbing agent is present in an amount such that ablation does not occur, the present specification teaches that the conditions where ablation would not occur is where the infrared absorbing compound is present in an amount to give the composition an optical density of between 0.4 to 2.0. Given that it would have been obvious to one of ordinary skill in the art to prepare the material of Hattori et al in view of Sheriff et al having an optical density within this range, it is the position of the examiner that when the optical density limitation is met, this limitation is also met.

3. Claims 7 and 15 are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al in view of Sheriff et al and Kobayashi (5,965,319).

Hattori et al and Sheriff et al have been discussed above, and although they list many conventional IR absorbers and teach that other known absorbers may be employed, they fail to specifically teach nickel thiolate.

Kobayashi discloses a negative imaging material suitable for use in a printing plate which comprises an infrared absorber. The suitable infrared absorbers are those conventionally employed in such materials and include cyanine dyes, thiopyrilium salts, pyrilium compounds, squarilium dyes, and nickel thiolate compounds which are the preferred compounds.

Given the teaching of Hattori et al that any known IR absorbing compound may be employed and the teaching of Kobayashi that preferred compounds known in the art include nickel thiolate, it would have been obvious to one of ordinary skill in the art to prepare the material of Hattori et al in view of Sheriff et al choosing to employ nickel thiolate as the infrared absorber compound as it is well known and preferred in the art, with reasonable expectation of achieving a plate having excellent printing durability and sensitivity.

4. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al in view of Sheriff et al and Aoshima (EP 1096315).

Hattori et al and Sheriff et al have been discussed above and teach the use of IR sensitizing dyes and sulfonium salts in a negative-type recording material, but fail to disclose a preferred structure for the cyanine dye that may be used in their inventions.

Aoshima disclose a negative-type printing plate comprising an IR sensitive dye and an onium salt. The onium salt may be a sulfonium compound (page 10 [0040]). The IR sensitive cyanine dye of the reference (formula II, page 4) meets the limitations of the present claims 19 and 20. This dye is a conventional IR sensitizing dye.

Given the teachings of Aoshima of conventional IR sensitizing dyes, it would have been obvious to one of ordinary skill in the art to prepare the material of Hattori et al in view of Sheriff et al choosing to use the cyanine dye of Aoshima as the IR sensitive dye, with reasonable expectation of achieving a plate having excellent printing durability and sensitivity.

Allowable Subject Matter

5. Claims 17 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to teach or suggest to one of ordinary skill in the art to prepare a material as described by the present claims wherein the infrared laser exposure is performed at a plate surface energy amount is $80mJ/cm^2$ or greater. The prior art of record teaches to employ a laser having a much lower energy (60-198 $\mu J/m^2$).

Response to Arguments

6. Applicant's arguments filed 7/17/2003 have been fully considered but they are not persuasive.

Applicant has argued that the Hattori et al reference fails to teach or suggest an infrared sensitive material. The examiner points to column 18, lines 38-40 of Hattori et al which clearly states that suitable dyes and sensitizers for use in its invention include near-infrared dyes, and column 19, lines 52-58 where it is clearly stated by the reference that the light-sensitive composition of the invention may be near-infrared sensitive. Given theses teachings it is the position of the examiner that the Hattori et al reference does teach an infrared sensitive material regardless of whether the examples of the reference employ infrared light for exposure.

Applicant has also argued that the Sheriff reference fails to teach or suggest an optical density meeting the present claim limitations. The examiner points to column 7, lines 50-58 where the reference clearly teaches one of ordinary skill in the art that the compounds should be present in the dried coated imaging layer an amount which gives the material an optical density of at least 0.05 to about 2.0, preferably about 0.5 to 2.0, thus teaching that this is a conventionally preferred optical density target when adding such infrared absorbers which encompasses and obviates the ranges presently claimed. In fact, the endpoints of the preferred range of the reference are within the presently claimed range, thus the reference specifically contemplates a material having an optical density falling within the presently claimed range. Furthermore, applicant filed a 1.132 declaration which compares samples having optical densities within and outside the scope of the instant claims. However, the declaration evidence is not persuasive. Applicant's claimed range for the optical density is 0.4 to 2.0, but the examples only compare materials having optical densities well within the range (1.16 and 0.98) to those having optical densities outside of the range (0.30 and 0.35). Applicant has not demonstrated that unexpected results are obtained over the entire claimed range, nor has applicant demonstrated that points outside of the presently claimed range at *both* ends of the range provide inferior results. According to the MPEP: DEMONSTRATING CRITICALITY OF A CLAIMED RANGE

> To establish unexpected results over a claimed range, applicants should compare a sufficient number of tests both inside and outside the claimed range to show the criticality of the claimed range. In re Hill, 284 F.2d 955, 128 USPQ 197 (CCPA 1960).

Additionally, applicant has stated that the materials having optical densities of 0.3 and 0.35 are within the range of Sheriff et al. However, it is unclear as to why the applicant chose these optical densities as the preferred range of Sheriff does not include these points and teaches away from using optical densities outside of the 0.5 to 2.0 range.

With respect to applicant's argument that the Hattori et al reference employs a much lower dose of energy for exposure, the examiner points out that the examples of that reference do not employ IR sensitive materials, even though the reference clearly teaches that the material may be IR sensitive, therefore the energy of the exposure does would be much less than presently claimed. The Sheriff et al reference has been relied upon above for teaching a conventional exposure dose for an IR sensitive material.

Applicant's amendments to the specification are deemed to be proper and have been entered with one exception. Applicant requested that page 25 be replaced, however, there was no replacement page 25 submitted in the response.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda C Walke whose telephone number is 703-305-0407. The examiner can normally be reached on M-R 5:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached on 703-308-2303. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Amanda C Walke
Examiner
Art Unit 1752

ACW
September 28,2003

JANET BAXTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700